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Tarek N. Fahmi
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
7th Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/755,483	SONG ET AL.	
	Examiner	Art Unit	
	Christopher M. Lambrecht	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-35 is/are pending in the application.

4a) Of the above claim(s) 33-35 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-32 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-35 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/5/2002.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-32, drawn to a system for determining a schedule for transmission times of various segments of digital content, classified in class 725, subclass 97.

II. Claims 33-35, drawn to a receiver for receiving segments of a multimedia presentation, classified in class 725, subclass 89.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as receiving television programs in the environment of a user. See MPEP § 806.05(d). Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Tarek Fahmi on 10/29/2004 a provisional election was made without traverse to prosecute the invention of group I, claims 1-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 33-35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 7, 8, 14-23, 28, 29, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by De Bey '031 (US005421031A).

With regard to claim 1, De Bey '031 discloses a method, comprising determining a schedule for transmission times of various segments of digital content (col. 5, ll. 27-36; digital, see col. 5, l. 67 – col. 6, l. 2) across multiple channels (col. 8, ll. 13-20) so as to permit any number of content consumers (i.e., multiple subscribers, col. 6, ll. 54-60) to begin playback of said segments of digital content from an origination point thereof (col. 10, ll. 1-6) within a waiting time of a request for such playback (col. 8, ll. 44-49).

As for claim 2, De Bey '031 discloses the method of claim 1 (see above), wherein the various segments of digital content together comprise a movie (col. 5, ll. 27-29, and col. 4, l. 68).

As for claim 7, De Bey '031 discloses the method of claim 2 wherein a cost function is associated with each of the various segments scheduled for transmission (there inherently exists a cost in terms of bandwidth for the transmission of each segment; furthermore, thus, transmitting any particular segment earlier than its required transmission time results in wasted bandwidth, and because later segments are transmitted less frequently than earlier segments, to transmit a later segment before an earlier segment results in a greater proportion of wasted bandwidth; therefore, a segment with the lowest of the cost functions is selected to be transmitted next (i.e., in any given time slot, the segments selected to be transmitted next are the lowest segment

numbers necessary to ensure continuous playback of the program within the maximum response time)).

As for claim 8, De Bey '031 discloses the method of claim 7 (see above) wherein the cost function comprises wasted bandwidth (i.e., as described in the rejection of claim 7, transmitting a particular segment number earlier than necessary results in wasted bandwidth; hence, when preparing the transmission schedule, the scheduler schedules the transmission of the various segments so as to minimize wasted bandwidth, col. 10, ll. 35-40).

As for claim 14, De Bey '031 discloses the method of claim 2 (see above) wherein the schedule is determined according to a periodic transmission process (col. 8, ll. 35-41; see fig. 5).

As for claim 15, De Bey '031 discloses the method of claim 14 (see above) wherein the periodic transmission process (illustrated in fig. 5) allows a broadcast schedule for the movie to be repeated every period time, the period time being equal to an integral (i.e., integer) multiple of a length of a movie (see fig. 5: the broadcast schedule is completed every 49 MRT slots for 30 segments (which comprise a length of a movie); therefore, the transmission process allows the broadcast schedule to be repeated every 2*(30 segments) = 60 MRTs (where the ratio of MRTs to segments is 1:1).

As for claim 16, De Bey '031 discloses the method of claim 14 wherein each one of the multiple segments (segments 1-30, fig. 5) is allocated to a transmission queue number (i.e., slot number, i.e., horizontal axis of fig. 5) of a transmission schedule table (illustrated in fig. 5) according to a number of times (i.e., the number of times a particular segment is transmitted in one instance of the broadcast schedule) equal to a movie period (i.e., VPT) divided by the sum of the waiting time (MRT) and a playback time (number *n* of the first slot in the schedule at which a particular segment is played back, i.e., n = 1 for segment 1, n = 2 for segment 2, n = 3 for segment 3, etc...; i.e., segment 1 is transmitted during every slot, segment 2 is transmitted every 2 slots, segment 3 is transmitted every 3 slots).

As for claim 17, De Bey '031 discloses the method of claim 15 (see above) wherein all of the segments allocated to a single one of the multiple channels form a pseudo-movie (where different segments of the movie are transmitted over different channels, col. 8, ll. 23, all of the segments allocated to a single channel will form a "pseudo-movie"), and all such pseudo movies for all of the multiple channels are input to multiple channels of a transmission head-end (subscriber distribution node 24, fig. 2) (i.e., the multiple channels carrying the various segments of the video program are input to the transmission head-end, col. 6, l. 67 – col. 7, l. 6).

With regard to claim 18, De Bey '031 discloses a method, comprising: i) dividing a multimedia presentation into sequential segments (col. 6, ll. 45-49), each segment having a time length (col. 8, ll. 51-54), ii) scheduling transmission of the segments of the multimedia presentation according to a schedule (col. 8, ll. 35-41) computed according to a specified delay time ("maximum response time", col. 8, ll. 44-49) that does not depend on the time lengths of the segments (col. 8, ll. 54-57), and iii) transmitting the segments over a broadcast network according to the schedule for each segment computed in step ii (col. 6, ll. 45-60).

As for claim 19, De Bey '031 discloses the method of claim 18 (see above) wherein a transmission bandwidth of multiple times that of the multimedia presentation is allocated for transmission of the segments (see fig. 5, detail of transmission sequence; where multiple segments are transmitted within one MRT interval (e.g., MRT #48, 9 segments are transmitted), the allocated transmission bandwidth is inherently multiple times that of the multimedia presentation (i.e., the bandwidth required to transmit 1 segment in 1 MRT interval)) and each segment is transmitted repeatedly based on the computed schedule (col. 9, ll. 25-29).

As for claim 20, De Bey '031 discloses the method of claim 18, wherein earlier segments (lower segment numbers) are transmitted more frequently than later segments (higher segment numbers) (see fig. 5).

As for claim 21, De Bey '031 discloses the method of claim 18 further comprising receiving the segments transmitted over the broadcast network (col. 7, ll. 11-17), storing the segments in temporary storage (buffer memory 42, fig. 2), and playing back the segments as soon as the delay time has elapsed (playback begins at latest upon lapsing of maximum response time, col. 8, ll. 44-49).

As for claim 22, De Bey '031 discloses the method of claim 18 wherein each of the segments is scheduled for repeated transmission at periodic times (see fig. 5).

As for claim 23, De Bey '031 discloses the method of claim 22 (see above) wherein the periodic times for transmission of each respective segments equals time offsets of the beginning of such segment plus an operator selected delay time (e.g., see fig. 5: transmission times of each respective segments (1-30) equals time offsets of the beginning of such segments (i.e., slot 1 for segment 1, slot 2 for segment 2, slot 3 for segment 3, etc.) plus an operator selected delay time (i.e., segment number *n* times the maximum response time MRT, where the MRT is chosen by the operator, see line 1 of first table in column 9).

With regard to claim 28, De Bey '031 discloses a server (scheduling/routing computer 30, fig. 2) configured to generate transmission schedules for each of a number of segments of a multimedia presentation (col. 6, ll. 45-60) to be transmitted over a multiple channels of a broadcast network (col. 8, ll. 13-23), said schedules computed according to a specified delay time (maximum response time MRT) that does not depend on time lengths of the segments (col. 8, ll. 44-49 and 54-59).

As for claim 29, De Bey '031 discloses the server of claim 28 (see above), wherein the transmission schedules are computed according to a periodic transmission procedure (col. 8, ll. 35-41, see fig. 5).

As for claim 32, De Bey '031 discloses the server of claim 29 (see above) wherein according to the periodic transmission procedure each of the segments is allocated to a transmission queue according to a schedule (col. 6, ll. 54-60, where a schedule is generated and the segments are transmitted according to said schedule, there inherently exists a transmission queue) that takes into account a period of the presentation (video play time VPT, col. 8, ll. 49-51), the delay time (maximum response time MRT, col. 44-49) and a playback time for each segment (*n*MRT*, col. 9, ll. 29-30, where *n* is equal to *VPT/MRT*, col. 9, ll. 3-5).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3-6, 24, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bey '031 in view of Willard (Willard et al., US006738972B1).

With regard to claim 3, De Bey '031 discloses the method of claim 2 (see above). However, De Bey '031 fails to disclose the schedule is determined according to an earliest-deadline-first (EDF) process.

In an analogous art, Willard discloses the schedule is determined according to an earliest-deadline-first (EDF) process (earliest maximum beginning time, col. 3, l. 64 – col. 4, l. 9, where a maximum beginning time constitutes a deadline), for the purpose of reducing the difficulty associated with scheduling large numbers of segments (modules) transmitted by the system (col. 2, ll. 28-35 and col. 1, l. 57 – col. 2, l. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 to include the schedule is determined according to an earliest-deadline-first (EDF) process, as taught by Willard, for the purpose of reducing the number of segments that must be transmitted by the system in a method for determining a schedule for transmission of digital content.

As for claim 4, De Bey '031 and Willard together disclose the method of claim 3 (see above) wherein in the EDF process a next transmission time for one of the various segments of digital content is determined by first finding an earliest deadline (earliest maximum beginning time) amongst a list of current deadlines for each of the various segments and selecting this segment for transmission (Willard, col. 4, l. 60 – col. 5, l. 12).

As for claim 5, De Bey '031 and Willard together disclose the method of claim 4 (see above) wherein the earliest deadline so chosen is verified to be later than a finishing time for a last transmitted segment (Willard, col. 6, ll. 26-32; ensures that the next earliest deadline is later than the finishing time for the most recently (i.e., last) transmitted segment).

As for claim 6, De Bey '031 and Willard together disclose the method of claim 4 wherein a new deadline for transmission of the selected segment is determined according to $T + t_i + t_d$, where T is a beginning time for the transmission of the selected segment, i is a segment number for the selected segment, t_i is the playback time of segment i and t_d is the waiting time (see De Bey '031, col. 8, ll. 65 – col. 9, ll. 57 and fig. 5; deadlines for each segment are scheduled according to T + n*MRT, which is equivalent to T + MRT + (n-1)*MRT for segments 1 through n, respectively; where T is the beginning time for the current (selected) segment, MRT is the playback time for a segment (slot length, col. 8, ll. 65-67), and (n-1)*MRT is the delay time).

With regard to claim 24, De Bey '031 discloses a method as in claim 18. However, De Bey '031 fails to disclose the segments having earlier transmission deadlines are scheduled first and as soon as possible.

In an analogous art, Willard discloses segments having earlier transmission deadlines are scheduled first and as soon as possible (earliest maximum beginning time, col. 3, l. 64 – col. 4, l. 9, where a maximum beginning time constitutes a deadline), for the purpose of reducing the difficulty associated with scheduling large numbers of segments (modules) transmitted by the system (col. 2, ll. 28-35 and col. 1, l. 57 – col. 2, l. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 to include the segments having earlier transmission deadlines are scheduled first and as soon as possible, as taught by Willard, for the purpose of reducing the number of segments that must be transmitted by the system in a method for determining a schedule for transmission of digital content.

With regard to claim 30, De Bey '031 discloses the server of claim 29 (see above). However, De Bey '031 fails to disclose an earliest-deadline-first (EDF) procedure, wherein according to the EDF procedure a next segment to be transmitted is determined by first finding an earliest transmission deadline amongst a list of current transmission deadlines for each of the segments and selecting this segment for transmission.

In an analogous art, Willard discloses an earliest-deadline-first (EDF) procedure, wherein according to the EDF procedure a next segment to be transmitted is determined by first finding an earliest transmission deadline amongst a list of current transmission deadlines for each of the segments and selecting this segment for transmission (earliest maximum beginning time, col. 3, l. 64 – col. 4, l. 9, where a maximum beginning time constitutes a deadline), for the purpose of reducing the difficulty associated with scheduling large numbers of segments (modules) transmitted by the system (col. 2, ll. 28-35 and col. 1, l. 57 – col. 2, l. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 to include an earliest-deadline-first (EDF) procedure, wherein according to the EDF procedure a next segment to be transmitted is

determined by first finding an earliest transmission deadline amongst a list of current transmission deadlines for each of the segments and selecting this segment for transmission, as taught by Willard, for the purpose of reducing the number of segments that must be transmitted by the system in a server configured to generate transmission schedules for a multimedia presentation.

9. Claims 9, 10, 12, 25, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bey '031 in view of Kermode (Kermode, Roger G., "A Novel Method for Video-On-Demand via Digital Broadcast", November, 1999).

With regard to claim 9, De Bey '031 discloses the method of claim 2. However, he fails to disclose the schedule is determined according to a just-in-time (JIT) process.

In an analogous art, Kermode discloses the schedule is determined according to a just-in-time (JIT) process, for the purpose of minimizing receiver storage, access latency, and bandwidth required for a desired level of performance (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 to include the schedule is determined according to a just-in-time (JIT) process, as taught by Kermode, for the purpose of minimizing receiver storage, access latency, and bandwidth required for a desired level of performance in a method for determining a schedule for transmission of multimedia content.

As for claim 10, De Bey '031 and Kermode together disclose the method of claim 9 (see above), wherein the JIT process schedules each of the various segments for transmission as close to a transmission deadline associated with each segment as possible (where the deadline corresponds to the time of transmission required to ensure segments arrive just in time for presentation, see abstract).

As for claim 12, De Bey '031 and Kermode together disclose the method of claim 10 wherein in the JIT process, transmission deadline associated with a particular one of the segments is determined as time equal to a current time plus a playback time for that particular one of the segments plus a waiting time (see De Bey '031, col. 8, ll. 65 – col. 9, ll. 57 and fig. 5; deadlines for each segment are scheduled according to T (current time) + n*MRT (offset), which is equivalent to T (current time) + MRT (playback time) + (n-1)*MRT (operator selected delay time) for segments 1 through n, respectively (slot length, col. 8, ll. 65-67)).

With regard to claim 25, De Bey '031 discloses a method as in claim 18, wherein the segments are transmitted as determined by respective time offsets (n*MRT, col. 9, ll. 25-30) and the specified delay (MRT, col. 8, ll. 44-49). However, he fails to disclose segments are transmitted just-in-time.

In an analogous art, Kermode discloses segments are transmitted just-in-time, for the purpose of minimizing receiver storage, access latency, and bandwidth required for a desired level of performance (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 to include segments are transmitted just-in-time, as taught by Kermode, for the purpose of minimizing receiver storage, access latency, and bandwidth required for a desired level of performance in a method for determining a schedule for transmission of multimedia content.

With regard to claim 31, De Bey '031 discloses the server of claim 29. However, he fails to disclose according to the just in time procedure each of the segments are scheduled for transmission as close to a transmission deadline associated with each segment as possible.

In an analogous art, Kermode discloses according to the just-in-time procedure each of the various segments for transmission as close to a transmission deadline associated with each

segment as possible, for the purpose of minimizing receiver storage, access latency, and bandwidth required for a desired level of performance (see abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 to include according to the just in time procedure each of the segments are scheduled for transmission as close to a transmission deadline associated with each segment as possible, as taught by Kermode, for the purpose of minimizing receiver storage, access latency, and bandwidth required for a desired level of performance in a server configured to generate schedules for the transmission of a multimedia presentation.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Bey '031 and Kermode as applied to claim 10 above, and further in view of De Bey '693.

With regard to claim 11, De Bey '031 and Kermode together disclose the method of claim 10 (see above). However, they fail to disclose conflicts for transmissions over the multiple channels are resolved by scheduling a segment with an earlier playback time closer to its deadline for transmission than a segment with a later playback time.

In an analogous art, In an analogous art, De Bey '693 discloses the deadlines (transmission intervals) associated with the various segments are computed according to a process wherein conflicts (i.e., too many segments scheduled for transmission during a given transmission interval) for transmissions over the multiple channels are resolved by scheduling a segment with an earlier playback time closer to its deadline for transmission than a segment with a later playback time (col. 22, ll. 25-30, 34-36, and col. 23, ll. 30-45; see fig. 19: interval number 6 represents a transmission deadline for 4 segments (namely, 1,2,3, & 6); because of a bandwidth conflict, one segment must be moved out of interval 6; as illustrated in fig. 19, and described in col. 23, ll. 30-45, segment 6 (a later segment number than 1, 2, or 3) is moved to an earlier interval (interval 5) to resolve the conflict; hence, an earlier segment (1, 2, or 3) is scheduled

closer to its deadline than a later segment (6)), for the purpose of not causing delay during playback from any of the starting points (col. 23, ll. 42-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 and Kermode to include disclose the deadlines associated with the various segments are computed according to a process wherein conflicts for transmissions over the multiple channels are resolved by scheduling a segment with an earlier playback time closer to its deadline for transmission than a segment with a later playback time, as taught by De Bey '693, for the purpose of not causing delay during playback from any of the starting points in a method for determining a schedule for transmission of multimedia content.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Bey '031 and Willard as applied to claim 4 above, and further in view of De Bey '693 (US006519693B1).

With regard to claim 13, De Bey '031 and Willard together disclose the method of claim 4. However, they fail to disclose the deadlines associated with the various segments are computed according to a process wherein conflicts for transmissions over the multiple channels are resolved by scheduling a segment with an earlier playback time closer to its deadline for transmission than a segment with a later playback time.

In an analogous art, De Bey '693 discloses the deadlines (transmission intervals) associated with the various segments are computed according to a process wherein conflicts (i.e., too many segments scheduled for transmission during a given transmission interval) for transmissions over the multiple channels are resolved by scheduling a segment with an earlier playback time closer to its deadline for transmission than a segment with a later playback time (col. 22, ll. 25-30, 34-36, and col. 23, ll. 30-45; see fig. 19: interval number 6 represents a transmission deadline for 4 segments (namely, 1,2,3, & 6); because of a bandwidth conflict, one

segment must be moved out of interval 6; as illustrated in fig. 19, and described in col. 23, ll. 30-45, segment 6 (a later segment number than 1, 2, or 3) is moved to an earlier interval (interval 5) to resolve the conflict; hence, an earlier segment (1, 2, or 3) is scheduled closer to its deadline than a later segment (6)), for the purpose of not causing delay during playback from any of the starting points (col. 23, ll. 42-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 and Willard to include disclose the deadlines associated with the various segments are computed according to a process wherein conflicts for transmissions over the multiple channels are resolved by scheduling a segment with an earlier playback time closer to its deadline for transmission than a segment with a later playback time, as taught by De Bey '693, for the purpose of not causing delay during playback from any of the starting points in a method for determining a schedule for transmission of multimedia content.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Bey '031 and Kermode as applied to claim 25 above, and further in view of De Bey '693.

With regard to claim 26, De Bey '031 and Kermode together disclose a method as in claim 25 (see above). However, they fail to disclose wherein in the case of conflict where more of the segments are to be transmitted than allocated bandwidth allows, segments later in the presentation are scheduled to be transmitted earlier in nearest empty slots, giving priority to earlier segments to be transmitted as closely as possible to their scheduled time slots.

In an analogous art, De Bey '693 discloses in the case of conflict where more of the segments are to be transmitted than allocated bandwidth allows, segments later in the presentation are scheduled to be transmitted earlier in nearest empty slots, giving priority to earlier segments to be transmitted as closely as possible to their scheduled time slots (col. 22, ll. 25-30, 34-36, and

col. 23, ll. 30-45; see fig. 19: interval number 6 represents a transmission deadline for 4 segments (namely, 1,2,3, & 6); because of a bandwidth conflict, one segment must be moved out of interval 6; as illustrated in fig. 19, and described in col. 23, ll. 30-45, segment 6 (a later segment number than 1, 2, or 3) is moved to an earlier interval (interval 5) to resolve the conflict; hence, an earlier segment (1, 2, or 3) is scheduled closer to its deadline than a later segment (6)), for the purpose of not causing delay during playback from any of the starting points (col. 23, ll. 42-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey '031 and Kermode to include in the case of conflict where more of the segments are to be transmitted than allocated bandwidth allows, segments later in the presentation are scheduled to be transmitted earlier in nearest empty slots, giving priority to earlier segments to be transmitted as closely as possible to their scheduled time slots for the purpose of not causing delay during playback from any of the starting points in a method for determining a schedule for transmitting a multimedia presentation.

13. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Bey in view of Aggarwal (Aggarwal et al. US005751336A).

With regard to claim 27, De Bey discloses a method as recited in claim 18. However, he fails to disclose calculating an overlap period between an end of a current presentation and a beginning of a next presentation, to minimize interruptions therebetween.

In an analogous art, Aggarwal discloses calculating (col. 3, l. 60 – col. 4, l. 6, where devising a schedule for transmission of video segments inherently involves calculating) an overlap period (the period extending between beginning of segment A2 and end of segment D1, see bottom half of fig. 1, constitutes an overlap for transmission of segments of movie 1 and movie 2) between an end of a current presentation (end of segment D1, bottom half of fig. 1) and a beginning of a next presentation (beginning of segment A2, bottom half of fig. 1), to minimize

interruptions therebetween, for the purpose of enabling the user to switch between movies one and two during the playback of either (col. 3 l. 60 – col. 4, l. 6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of De Bey to include calculating an overlap period between an end of a current presentation and a beginning of a next presentation, to minimize interruptions therebetween, as taught by Aggarwal, for the purpose of enabling the user to switch between movies one and two during the playback of either, in a method for determining a schedule for transmission of a multimedia presentation.

Conclusion

14. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on _____.
(Date)

Typed or printed name of person signing this certificate:

_____

Signature: _____

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703)_____ - _____ on _____.
(Date)

Typed or printed name of person signing this certificate:

_____

Signature: _____

Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

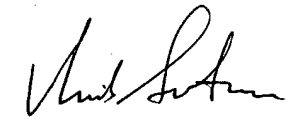
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Lambrecht whose telephone number is (703) 305-8710. The examiner can normally be reached on 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached on (703) 305-4755. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher M. Lambrecht
Examiner
Art Unit 2611

CML



VIVEK SRIVASTAVA
PRIMARY EXAMINER